

APPARATUS FOR AND METHOD OF RENDERING 3D OBJECTS
WITH PARAMETRIC TEXTURE MAPS

ABSTRACT OF THE DISCLOSURE

- 5 A graphics system that employs parametric texture maps. The graphics system renders surface features of a 3D object in a manner that is direction dependent but without the time consuming and expensive calculations involved in the evaluation of lighting equations on a per pixel basis. A parametric texture map holds a set of parameters that
- 10 define a surface structure in a manner in which the appearance of the surface structure varies in response to a direction vector. The direction vector may be any user-defined vector including a light source vector or a half-angle vector. The parameters are those of a predetermined equation, the evaluation of which does not involve vector calculations.
- 15 The equation may take any form including a polynomial equation or a non-polynomial equation. The graphic system renders a polygon with the surface structure using the equation.